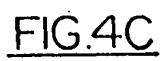
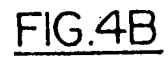
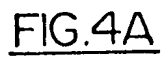


FIG. 2





003507 003000

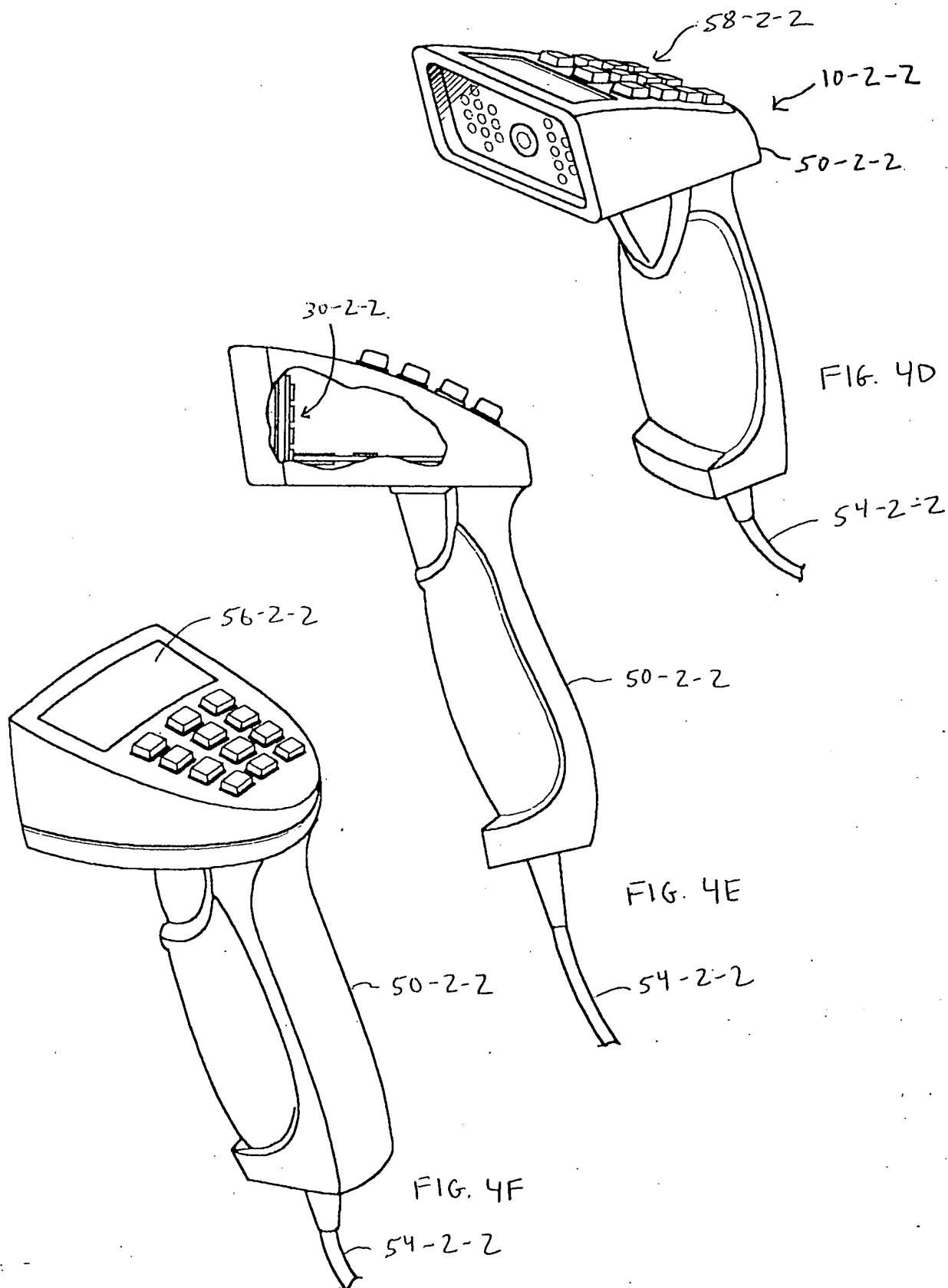


FIG. 46

FIG. 4I

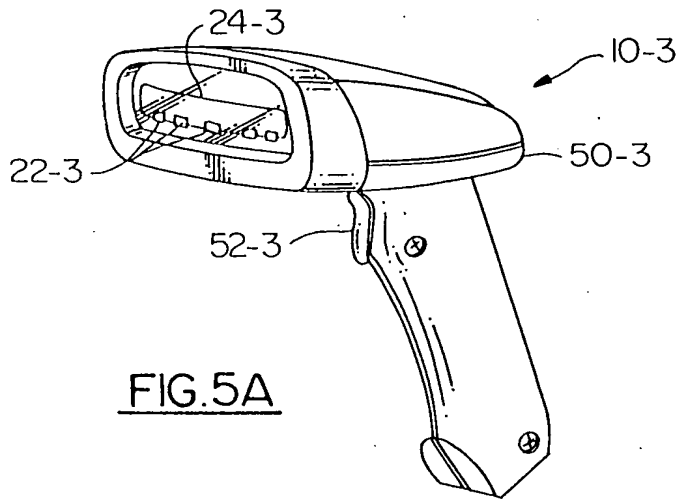


FIG. 5A

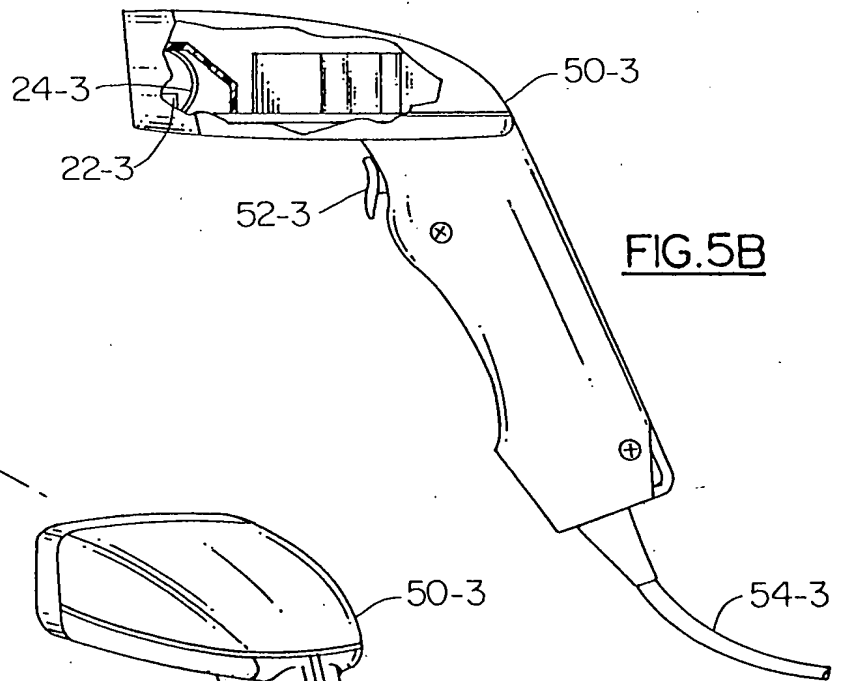


FIG. 5B

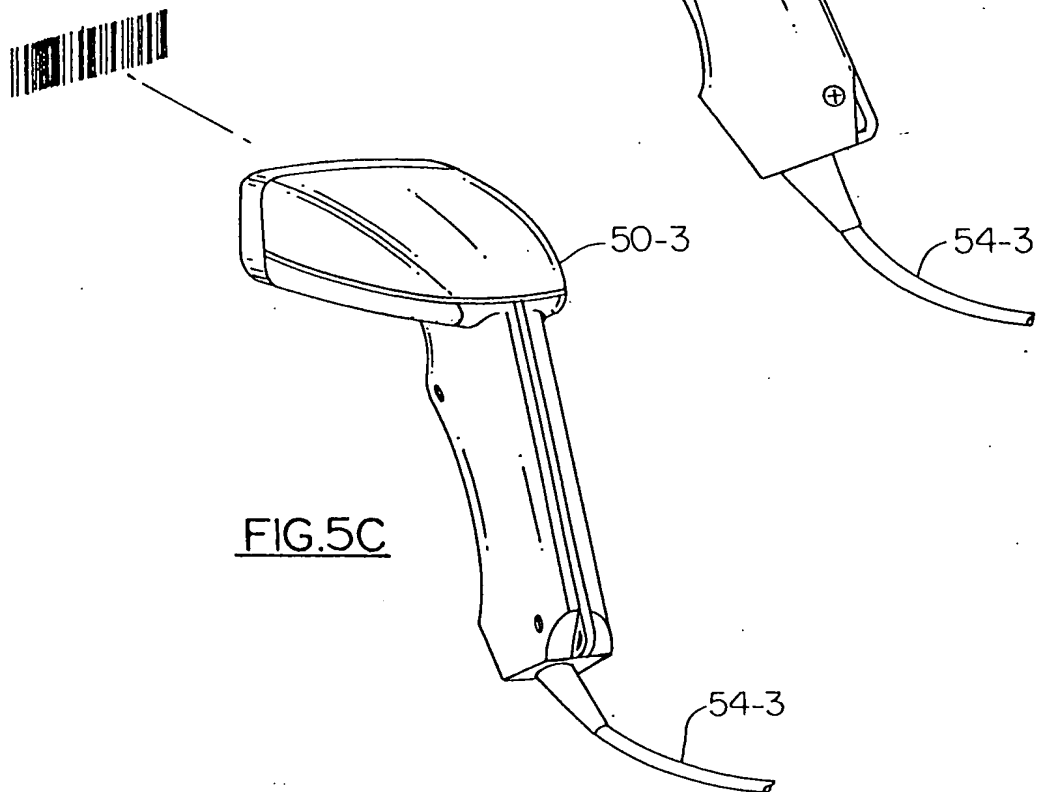


FIG. 5C

660280 26538600

```

graph TD
    ENTER([ENTER]) --> TRIGGER{TRIGGER PULL ?}
    TRIGGER -- NO --> TRIGGER
    TRIGGER -- YES --> INIT_HARD[INITIALIZE READER HARDWARE]
    INIT_HARD --> DEF_MEM[DEFINE MEMORY SPACE FOR IMAGE DATA]
    DEF_MEM --> INIT_SETTINGS[INITIALIZE READER TO DEFAULT SETTINGS]
    INIT_SETTINGS --> CAP_IMG[CAPTURE IMAGE]
    CAP_IMG --> ATTEMPT[ATTEMPT DECODE]
    ATTEMPT --> DECODE{DECODE SUCCESSFUL ?}
    DECODE -- NO --> TRIG_PULL{TRIG, STILL PULLED ?}
    DECODE -- YES --> IS_MENU{IS SYMBOL A MENU SYM. ?}
    IS_MENU -- NO --> OUTPUT[OUTPUT DATA]
    IS_MENU -- YES --> EXEC_MENU[EXECUTE MENU ROUTINE]
    OUTPUT --> RUD{RUD ?}
    EXEC_MENU --> RUD
    RUD -- YES --> STOP1([STOP])
    RUD -- NO --> TRIG_PULL
    TRIG_PULL -- YES --> REPEAT{REPEAT PER CURRENT MODE ?}
    TRIG_PULL -- NO --> STOP2([STOP])
    REPEAT -- YES --> CAP_IMG
    REPEAT -- NO --> REPROG{REPROG. REQUEST ?}
    REPROG -- YES --> EXEC_REPROG[EXECUTE REPROG. ROUTINE]
    EXEC_REPROG --> STOP2
    REPROG -- NO --> TRIG_PULL

```

FIG. 6A



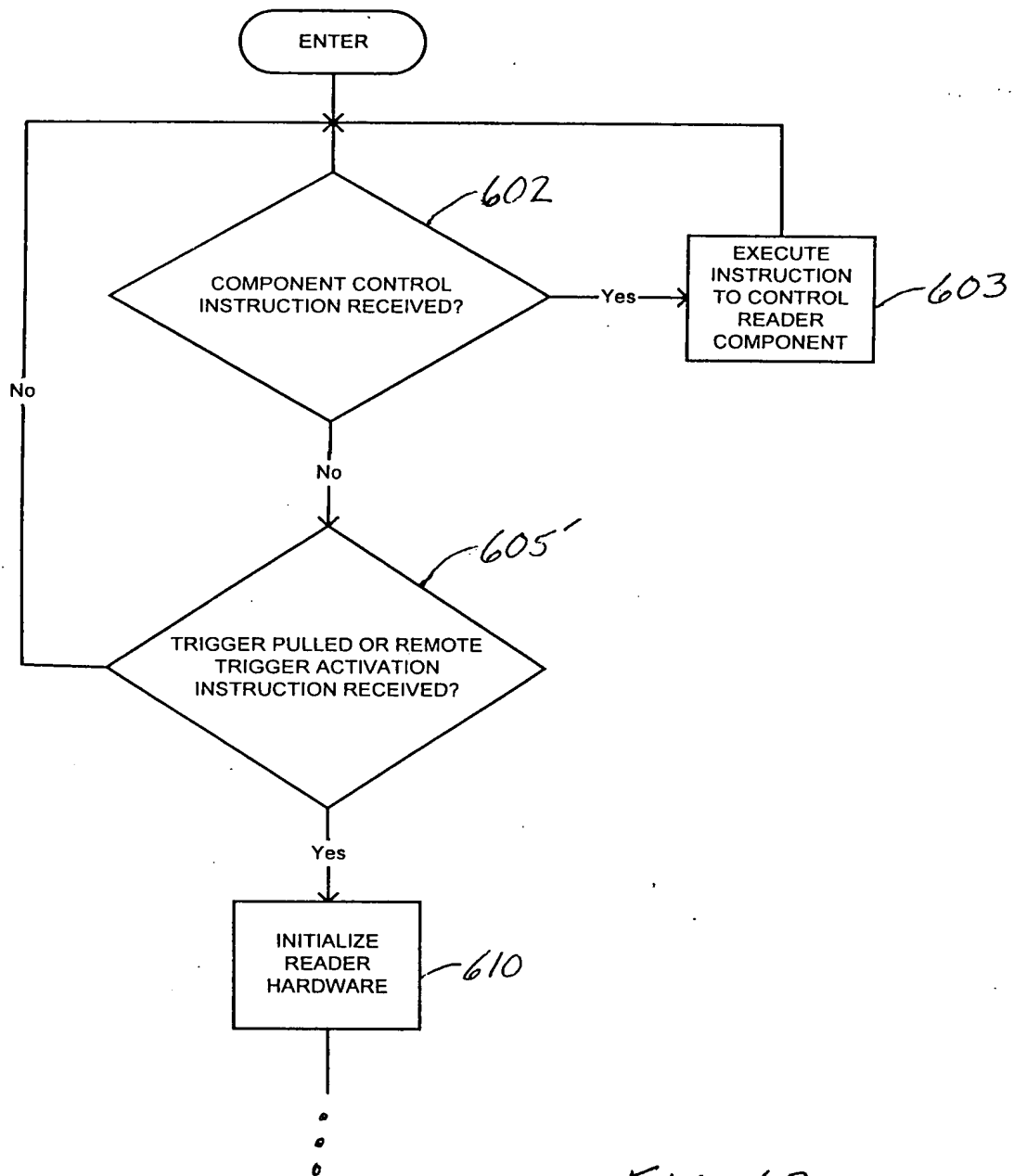


FIG. 6B

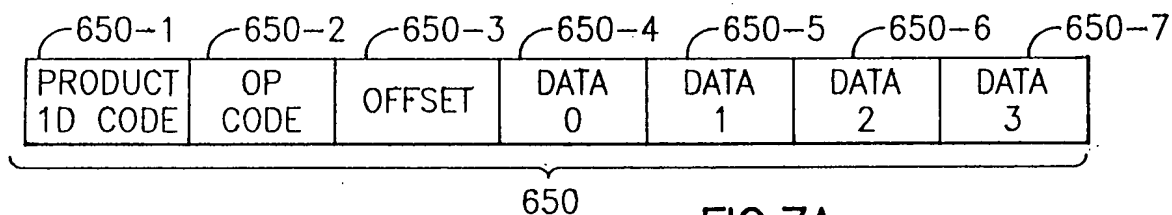


FIG.7A

OPTIONS (OFFSET) TABLE

- A. COMMUNICATIONS OPTIONS
  - 1. RS-232
  - 2. BAUD RATE
  - 3. RF LINK
  - 4. ETHERNET
- B. CODE OPTIONS
  - 1. DISABLE 1D
  - 2. DISABLE 2D
  - 3. DISABLE INDIV.
  - 4. MIN-MAX LENGTH
  - 5. MULTIPLE SYMBOLS ENABLED
- C. SCANNING-DECODING OPTIONS
  - 1. ONE SHOT
  - 2. REPEAT UNTIL DONE
  - 3. REPEAT UNTIL STOPPED
  - 4. SCAN ON DEMAND
  - 5. SKIP SCAN
  - 6. DECODE ON DEMAND
- D. OPERATING OPTIONS
  - 1. BEEPER VOLUME
  - 2. AIMING LED ON/OFF
  - 3. AURAL FEEDBACK
- E. TRANSMIT OPTIONS
  - 1. SEND CHECK CHAR'S
  - 2. SEND CHECKSUM
  - 3. DATA EDIT OPTIONS

FIG.7B

OP CODE TABLE

- A. OP CODE "0"-VECTOR PROC.
  - 1. OUTPUT VERSION OF SOFTWARE
  - 2. OUTPUT CONTENTS OF PARAMETER TABLE
  - 3. DISPLAY ENABLED CODES
  - 4. PRINT PARAMETER TABLE AS BAR CODE SYMBOL
- B. OP CODE "1" - CLEAR
- C. OP CODE "2" - SET
- D. OP CODE "3" - TOGGLE
- E. OP CODE "4" - ADD
- F. OP CODE "5" - DEFAULT
- G. OP CODE "6" - LOAD
- H. OP CODE "7" - RESERVED

FIG.7C

66000 269360

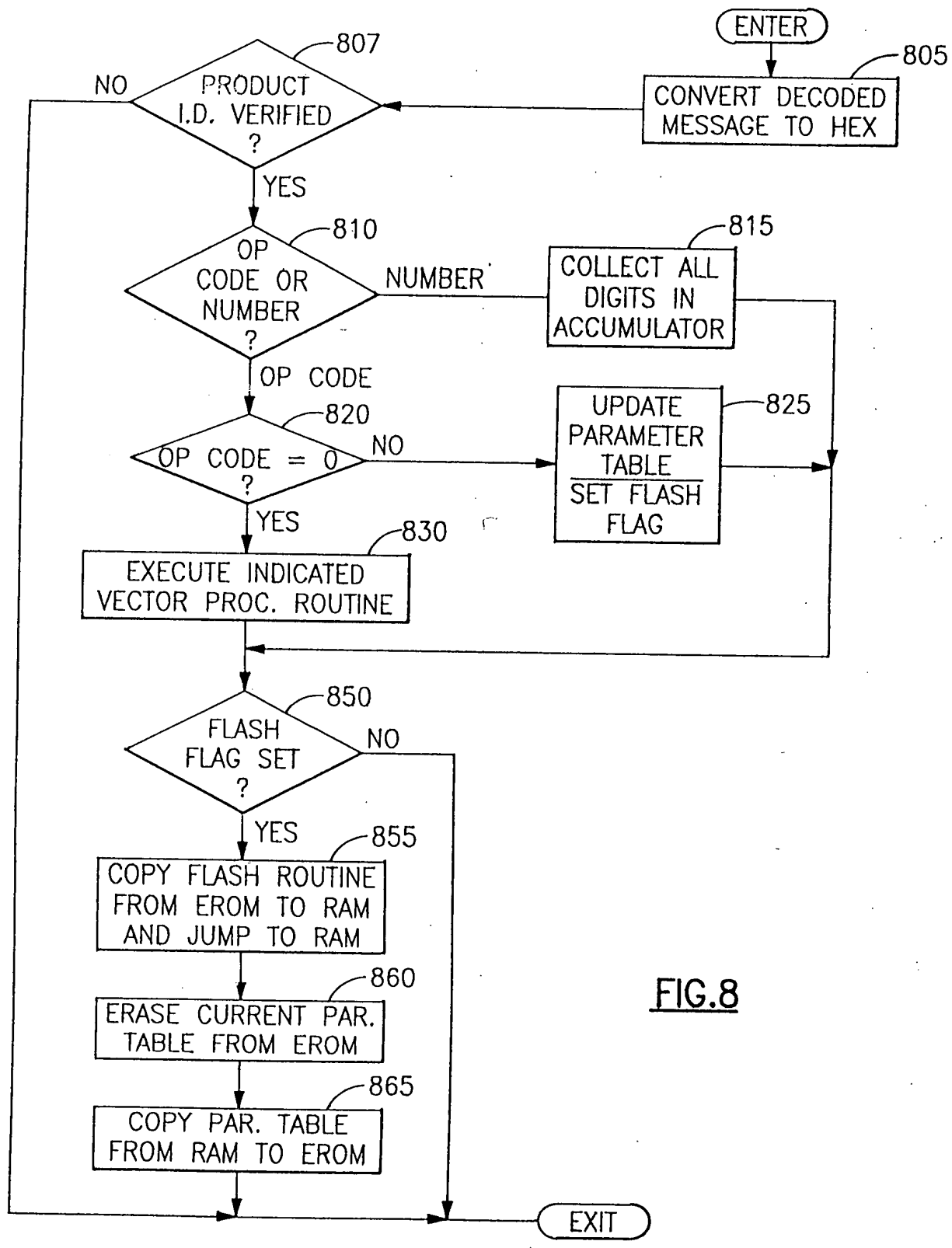


FIG.8

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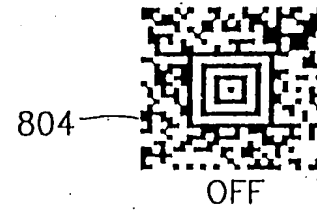
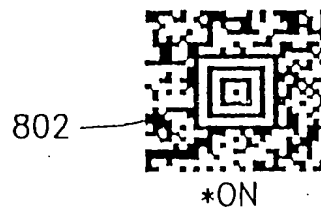
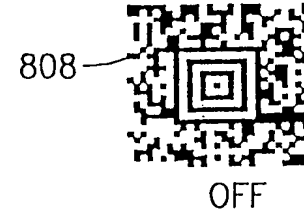
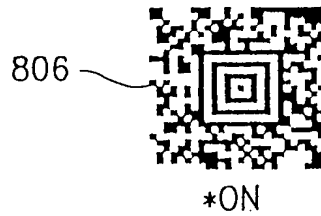


FIG. 8A

UPC A SELECTION



BAUD RATE SELECTION

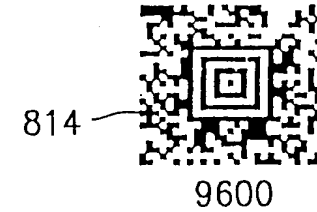
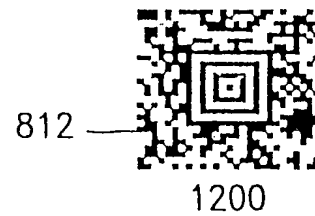
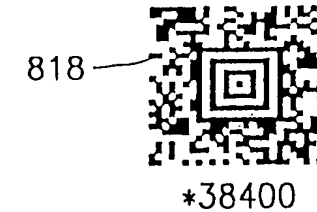
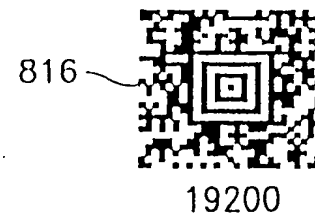


FIG. 8B

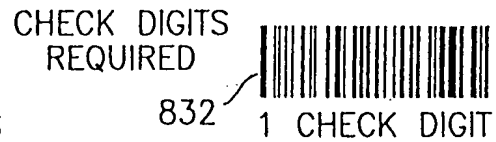
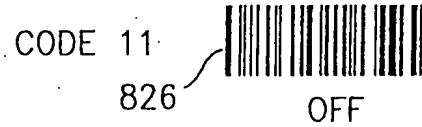
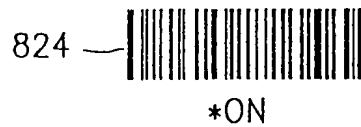


**FIG.8C**

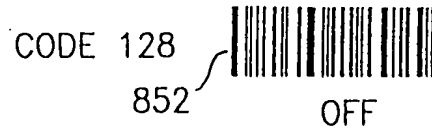
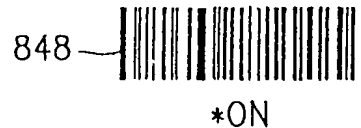
\*DEFAULT ALL CODE 11/CODE 128 SETTINGS\*



CODE 11 SELECTION



CODE 128 SELECTION



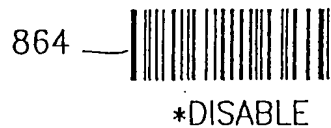
‡ A TWO-DIGIT NUMBER IS REQUIRED AFTER SCANNING THIS PROGRAMMING BAR CODE. PLEASE SCAN YOUR SELECTION ON THE PROGRAMMING CHART (INSIDE BACK COVER).

660600 4633600

RS-232D PORT 2 (D OUTPUT)  
\*DEFAULT ALL RS-232 PORT 2 SETTINGS\*



CTS CHECK SELECTION



BAUD RATE SELECTION

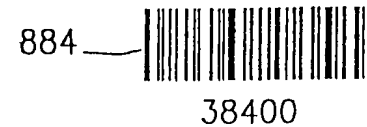
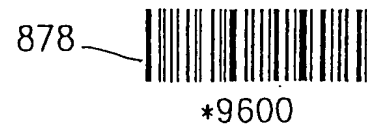
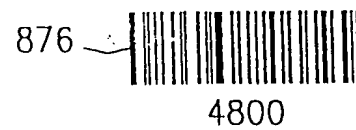
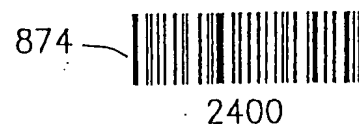
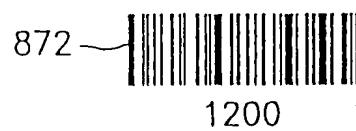
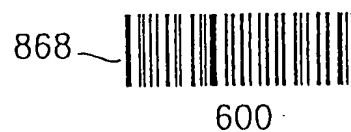
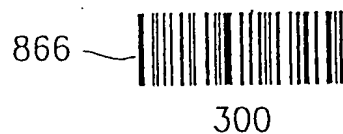


FIG.8D

REPROG. SYSTEM

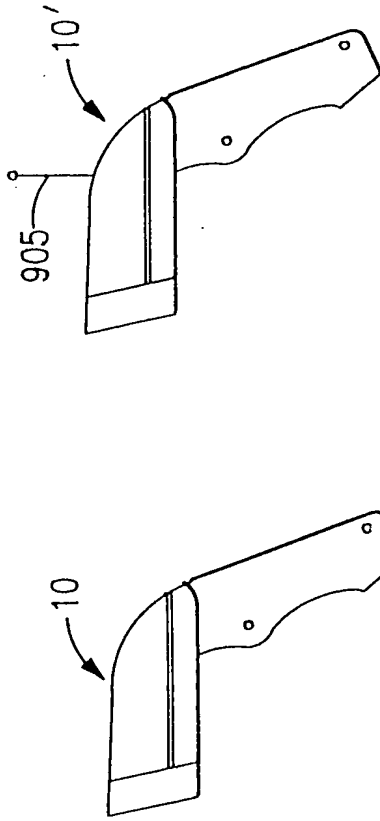
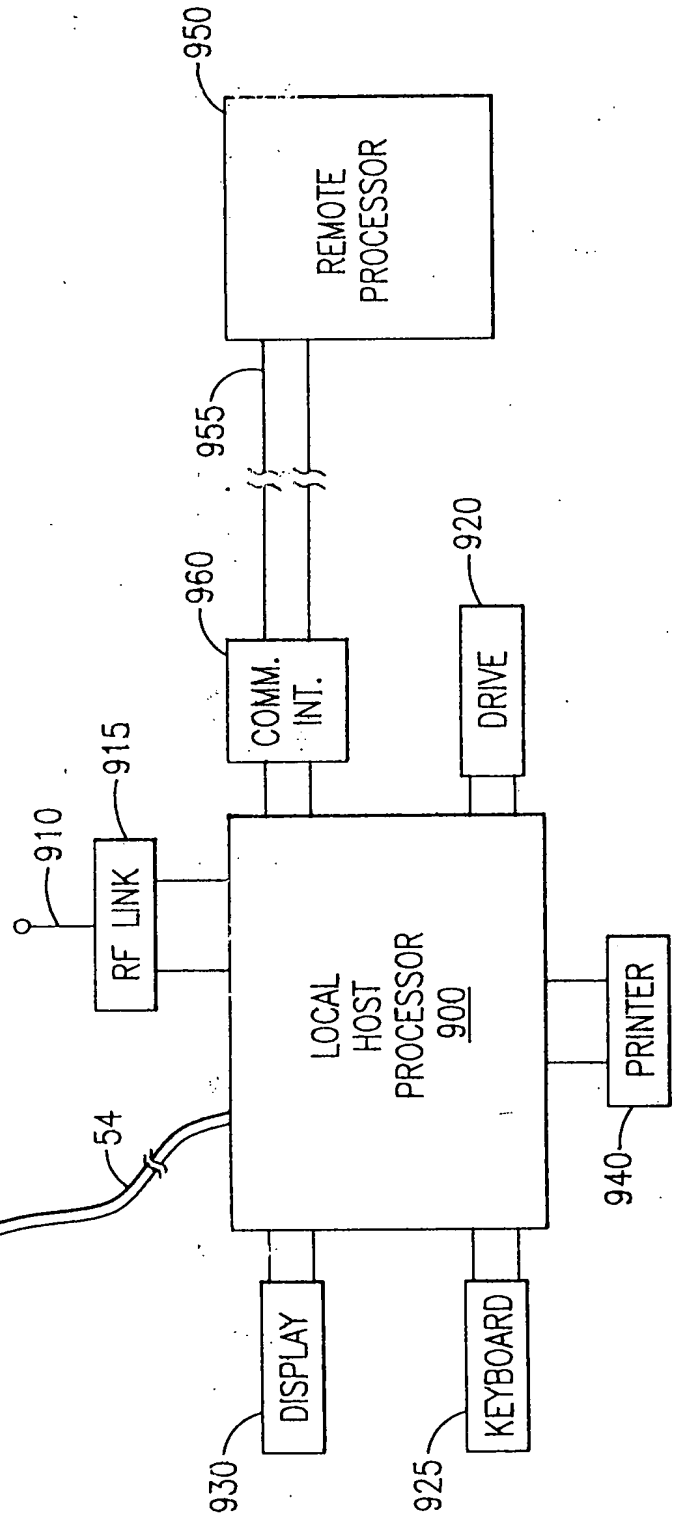


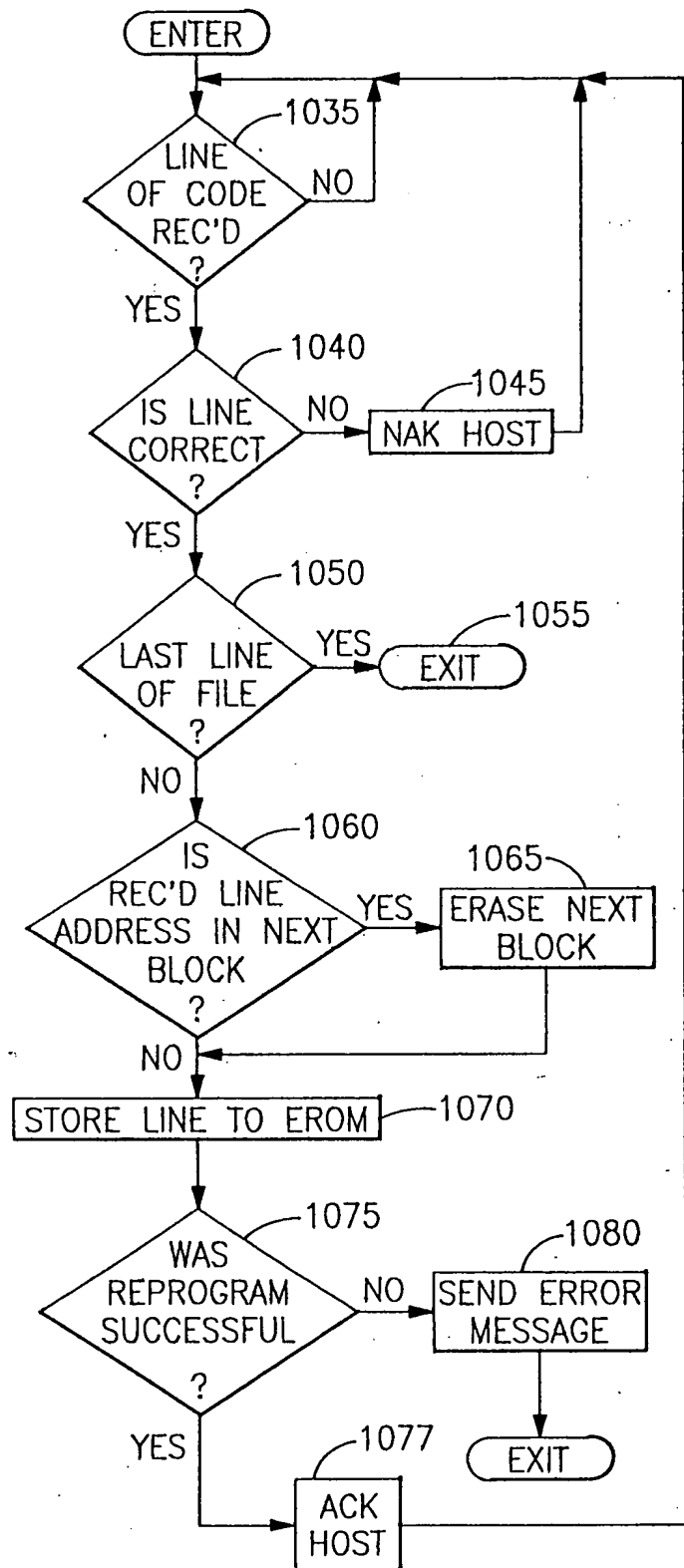
FIG. 9



```

graph TD
    ENTER([ENTER]) --> BBOOT{BBOOT ?}
    BBOOT -- NO --> 1005
    BBOOT -- YES --> 1007{LINE OF CODE REC'D ?}
    1007 -- NO --> 1005
    1007 -- YES --> 1010[STORE LINE IN RAM]
    1010 --> 1015[ACK HOST]
    1015 --> 1020{LAST LINE ?}
    1020 -- NO --> 1005
    1020 -- YES --> 1025[JUMP TO RAM AND EXECUTE PROGRAM IN RAM]
    1025 --> EXIT([EXIT])

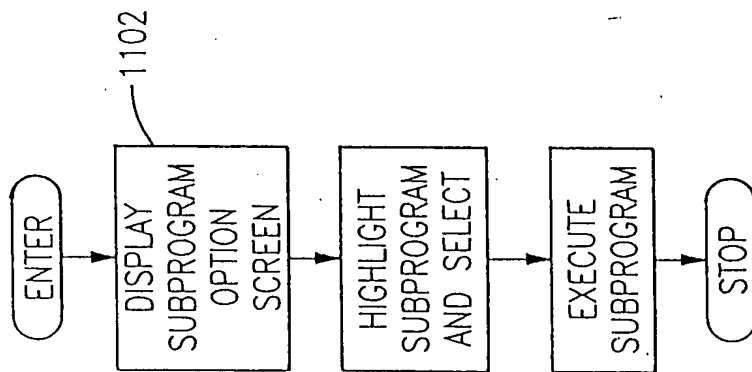
```





1160

```
IF (MESSAGE TYPE== CODABAR.)
    AND
(PARMETER TABLE, CODABAR ==ON)
    THEN ATTEMPT TO
        DECODE MESSAGE
```



**FIG. 11A**

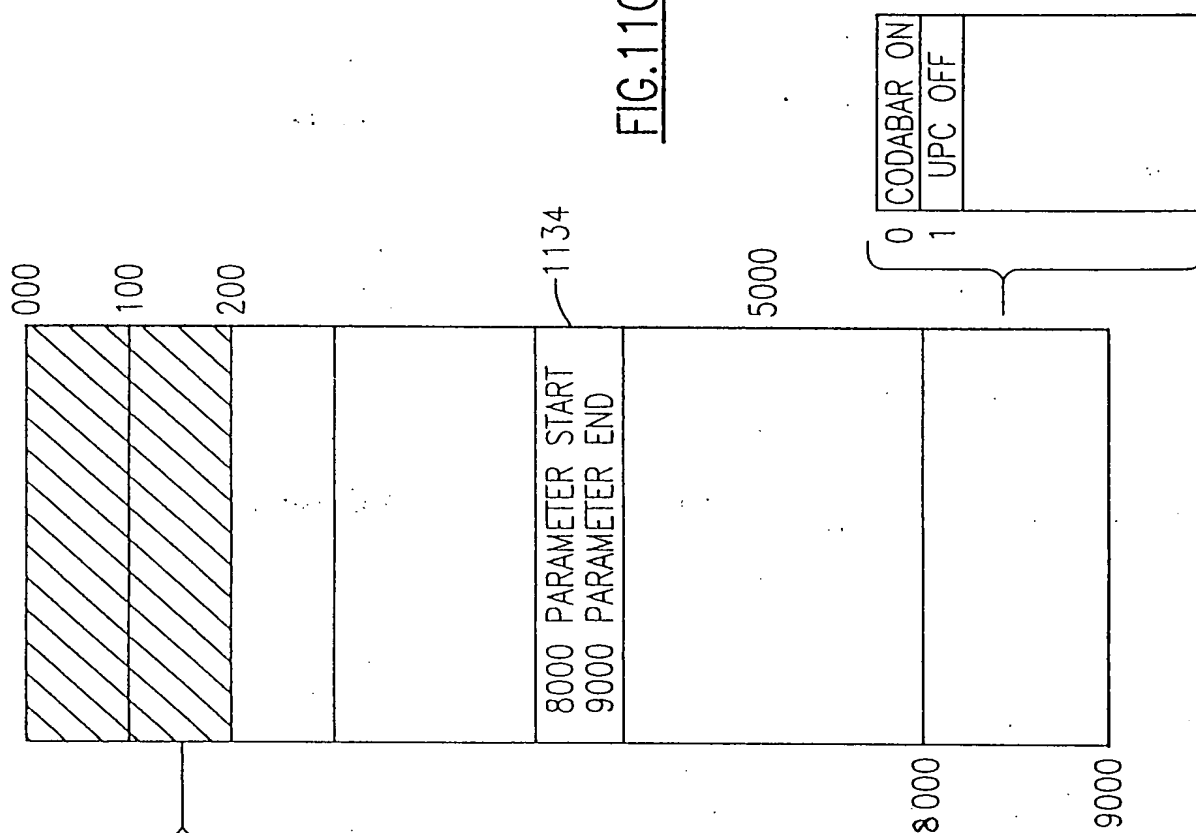


FIG. 11C

6622 43360

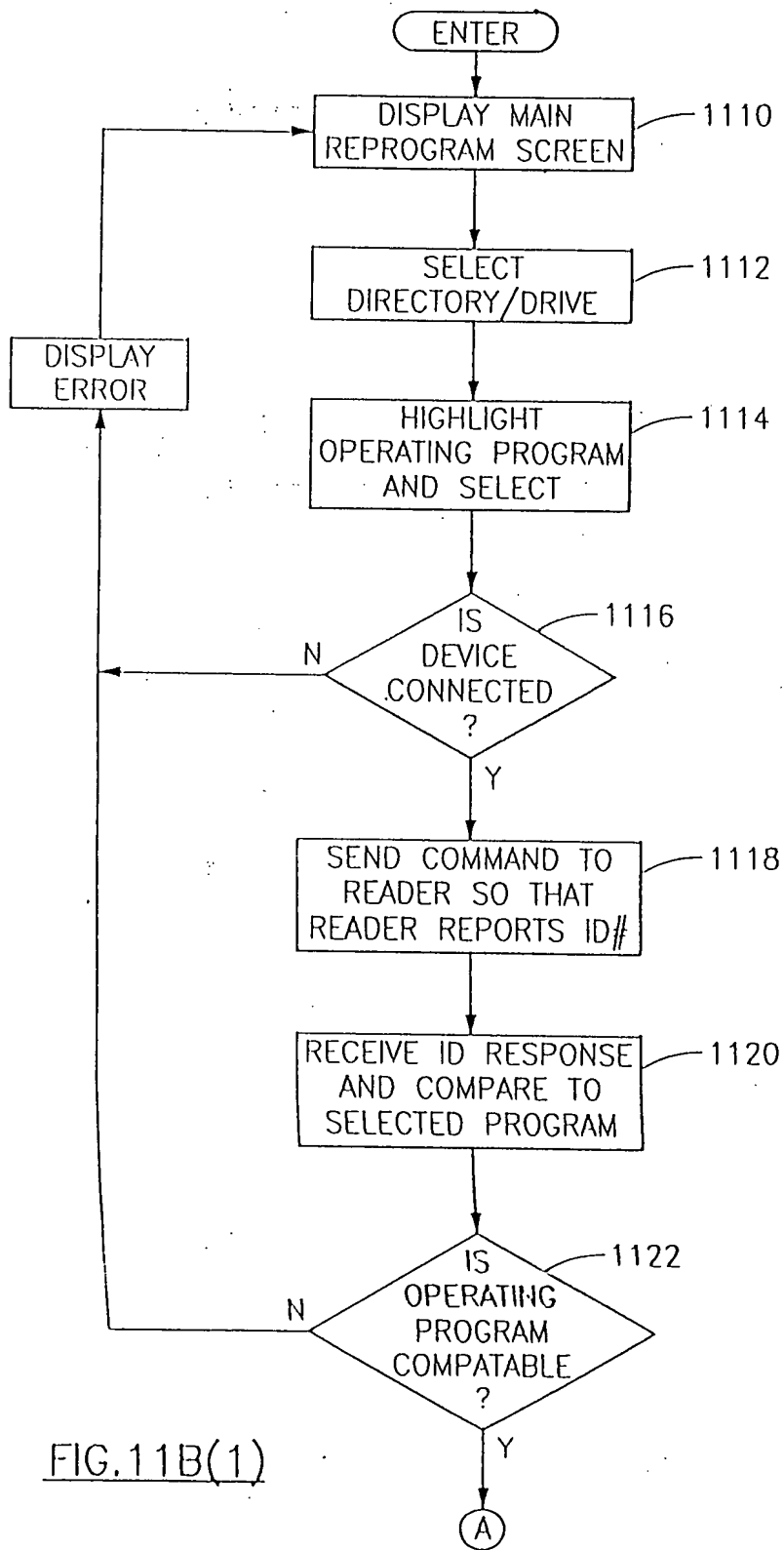


FIG. 11B(1)

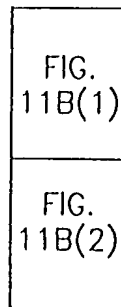


FIG. 11B

FIG.11B(2)

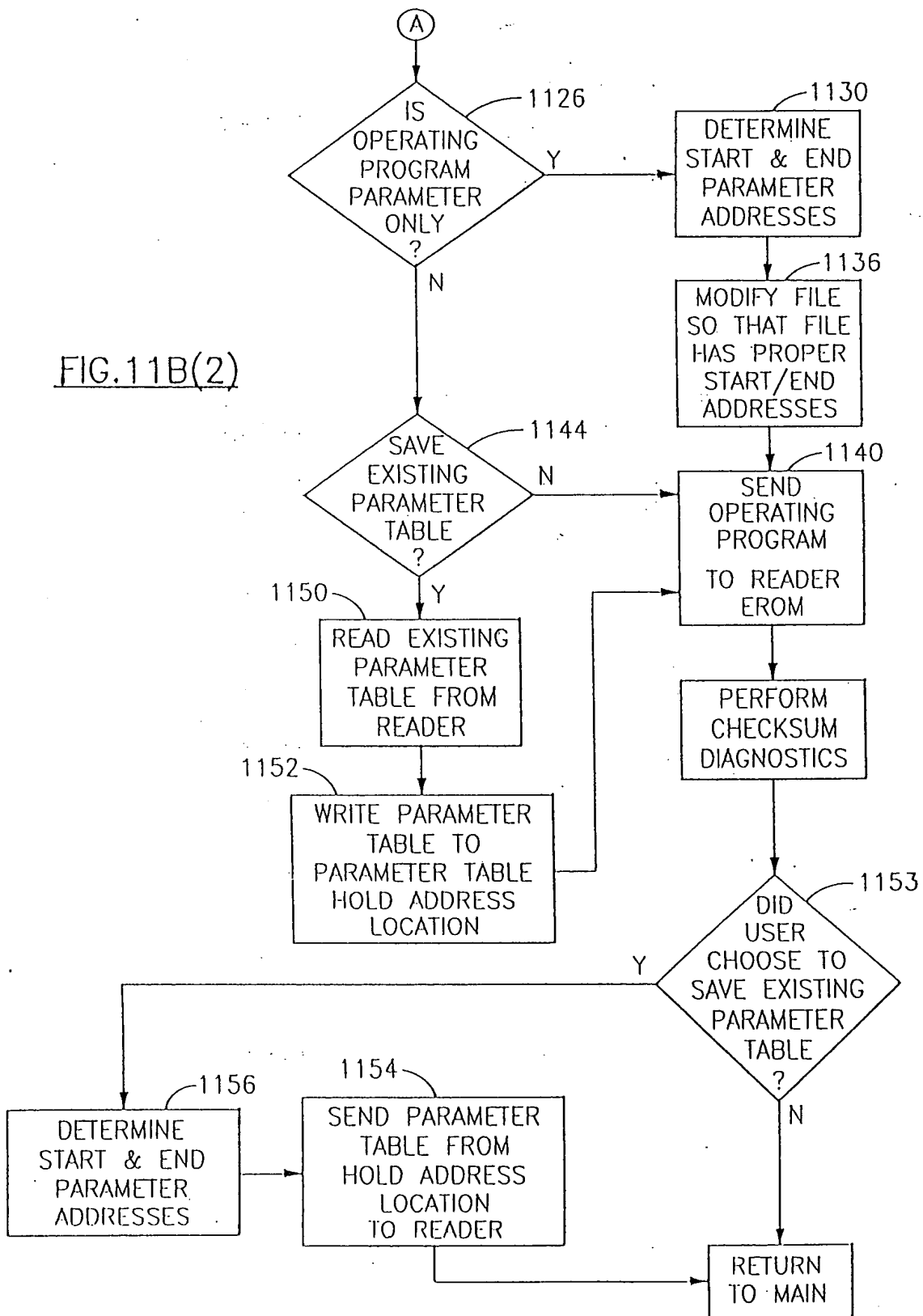


FIG. 11D(1)

FIG.  
11D(2)

FIG. 11D

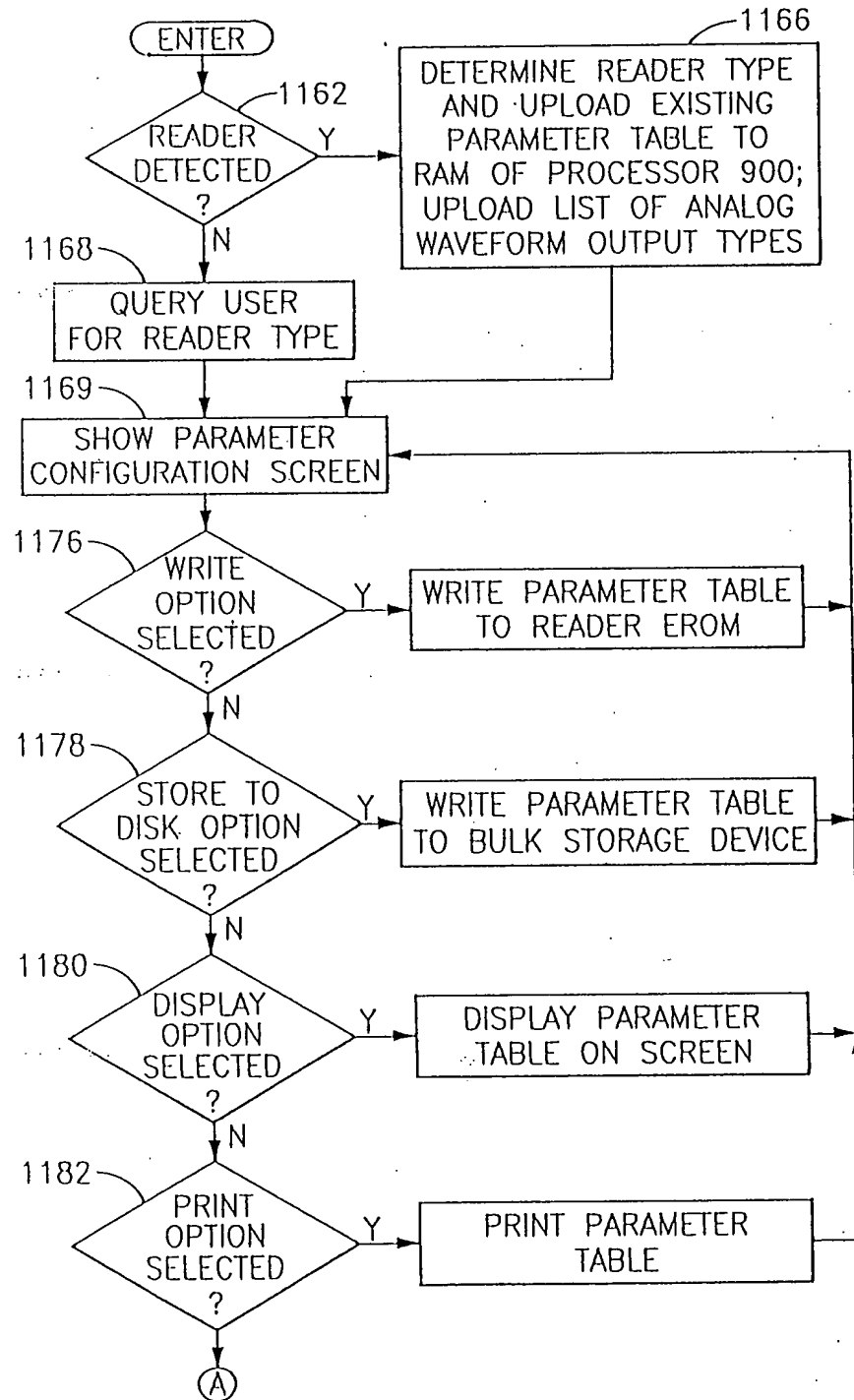


FIG. 11D(1)

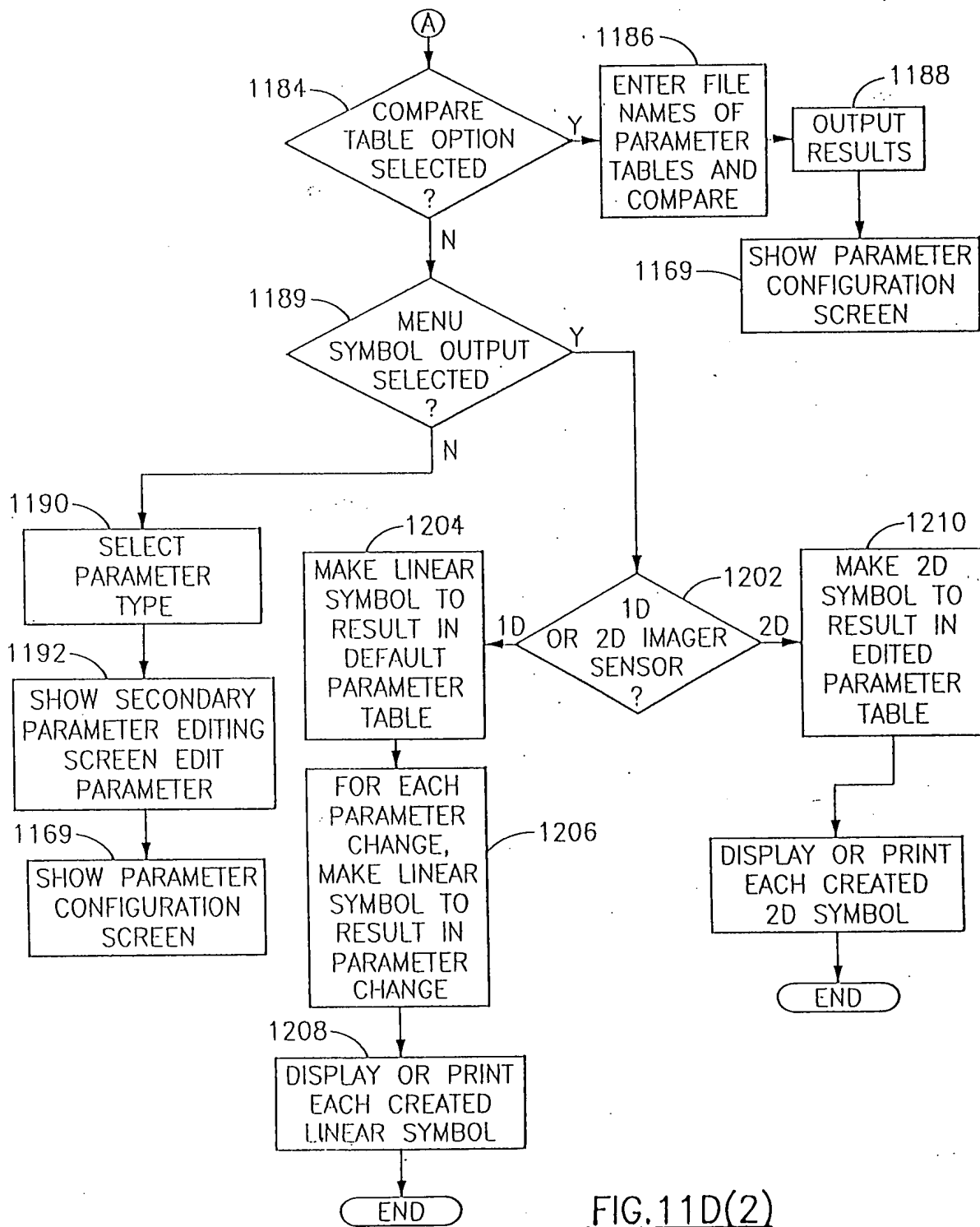
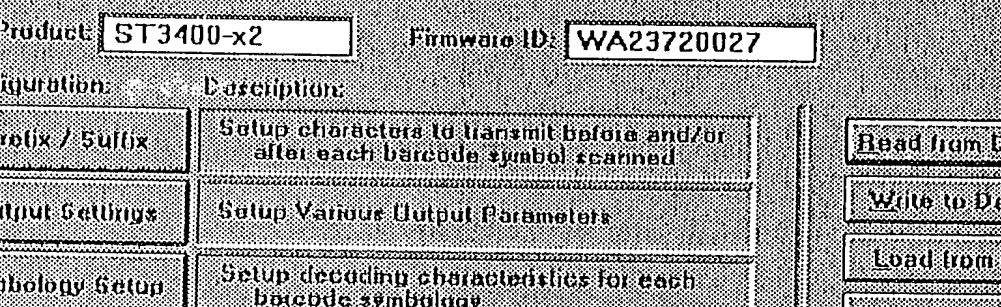


FIG. 11D(2)

1174



**Device Configuration**

Product: **ST3400-x2**      Firmware ID: **WA23720027**

Configuration:	Description:
Prefix / Suffix	Setup characters to transmit before and/or after each barcode symbol scanned
Output Settings	Setup Various Output Parameters
Symbology Setup	Setup decoding characteristics for each barcode symbology
Terminal Interface	Select the Terminal Interface the device will connect to
Data Formatting	Customize the format of the output of the barcode message
Serial Settings	Setup the device's serial communication parameters
Mac. Settings	Setup various primary and secondary interface options

Buttons on the right:

- Read from Device
- Write to Device
- Load from Disk
- Save to Disk
- Default All
- Help
- Close

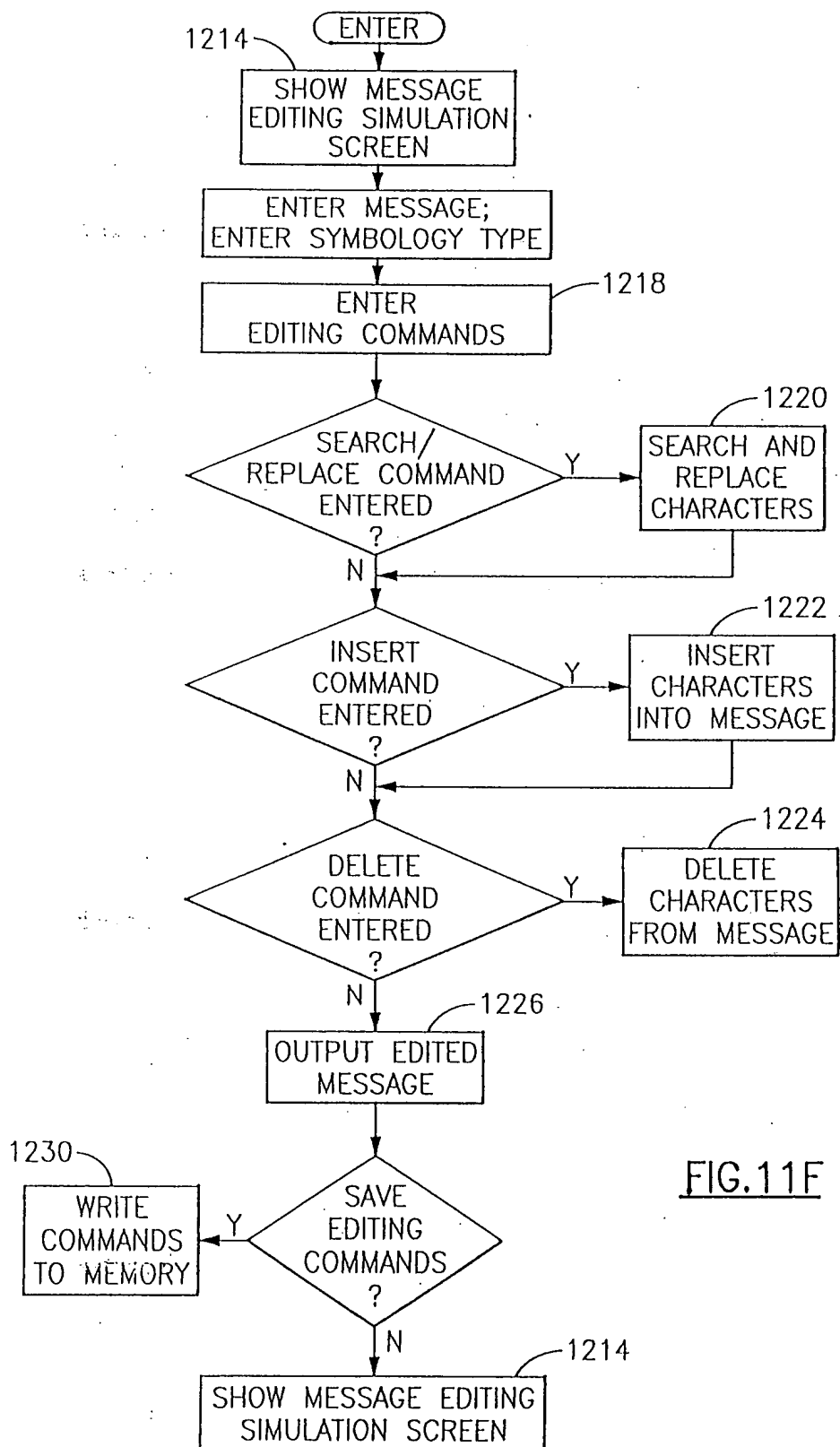
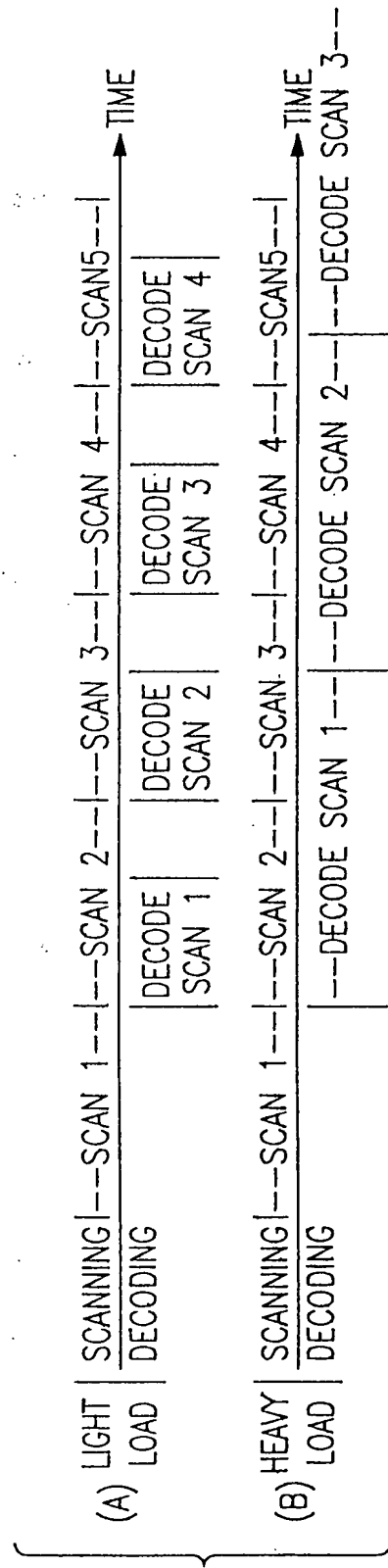
[illegible]

FIG. 11F



**FIG.12**

Prior Art



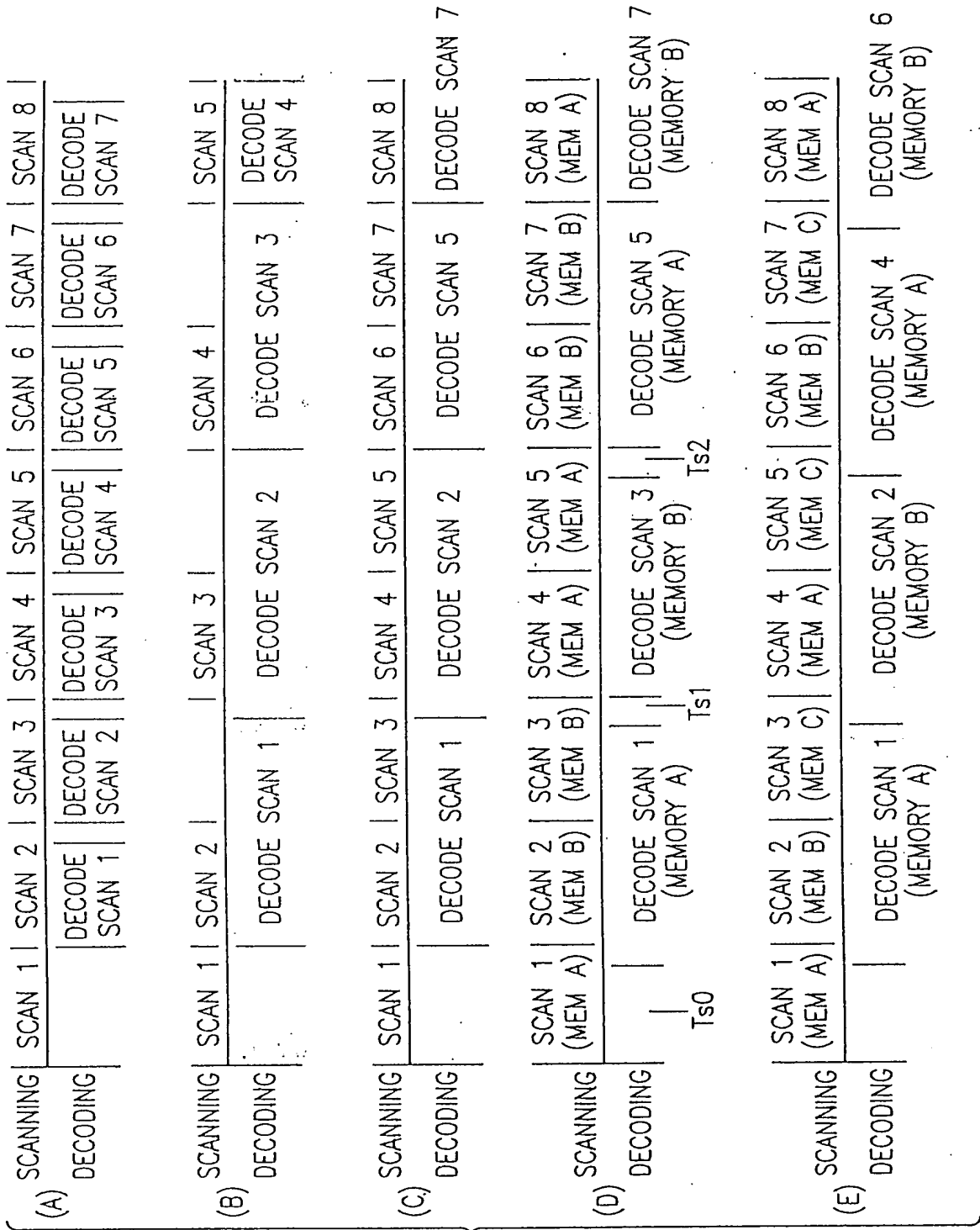
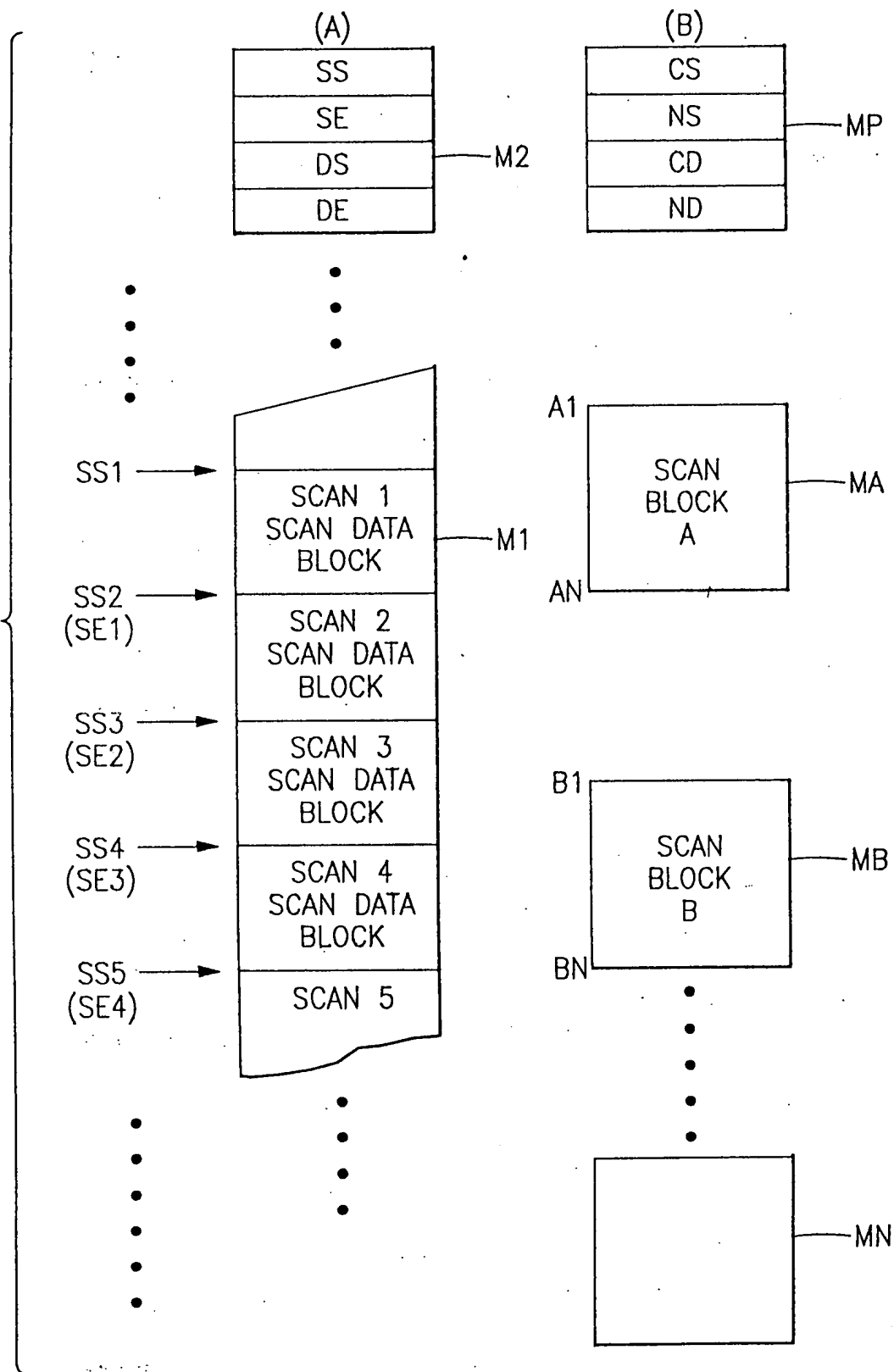


FIG.13

**FIG.14**



```

graph TD
    ENTER([ENTER]) --> CAPTURE[CAPTURE IMAGE]
    CAPTURE --> DECODE{DECODE  
SUCCESSFUL?  
630}
    DECODE -- YES --> OUTPUT[OUTPUT DATA]
    DECODE -- NO --> TRIG{TRIG. STILL  
PULLED?  
635}
    TRIG -- YES --> REPEAT{REPEAT  
PER CURRENT  
MODE?  
642}
    TRIG -- NO --> STOP([STOP])
    REPEAT -- YES --> CAPTURE
    REPEAT -- NO --> STOP
    OUTPUT --> RUD{RUD?  
647}
    RUD -- YES --> TRIG
    RUD -- NO --> CAPTURE

```

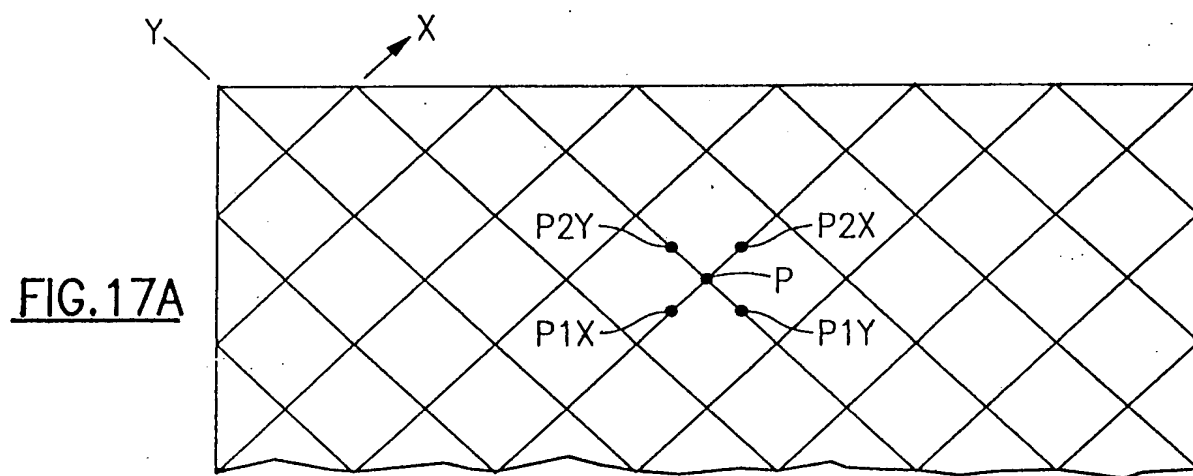
FIG.15

```

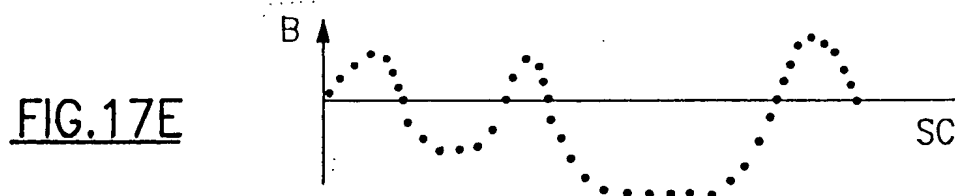
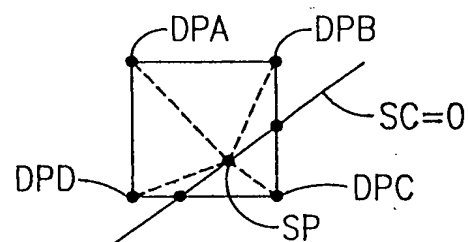
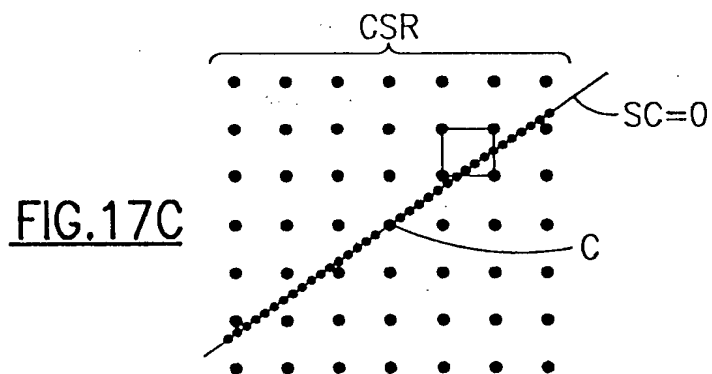
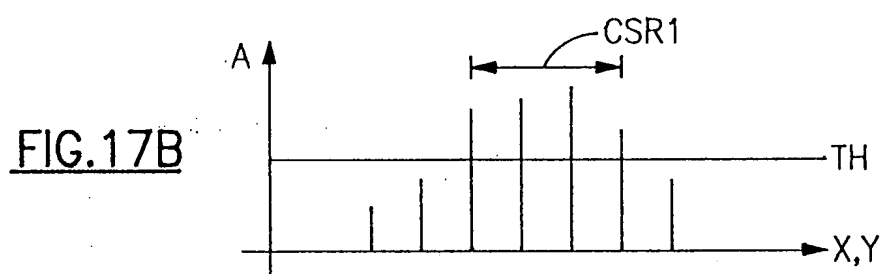
graph TD
    ENTER([ENTER]) --> 1605[1605  
CALCULATE ACTIVITIES  
OF SELECTED IMAGE DATA]
    1605 --> 1610[1610  
LOCATE AND NUMBER  
CANDIDATE SYMBOL REGIONS]
    1610 --> 1615[1615  
SELECT LARGEST UNEXAMINED  
CANDIDATE SYMBOL REGION]
    1615 --> 1620[1620  
FIND CENTROID OF SELECTED  
CANDIDATE SYMBOL REGION]
    1620 --> 1625[1625  
FIND THE DIRECTION OF  
HIGHEST ACTIVITY]
    1625 --> 1630[1630  
SET SCAN LINE COUNT SC=0]
    1630 --> 1635[1635  
DEFINE SCAN LINE IN  
DIRECTION OF HIGHEST ACTIVITY  
(SC=0 DEFINES SCAN LINE  
THROUGH CENTROID)]
    1635 --> 1640[1640  
CALCULATE VALUES ALONG  
CURRENT SCAN LINE]
    1640 --> 1645[1645  
BINARIZE SCAN LINE VALUES]
    1645 --> 1650[1650  
ATTEMPT ID DECODE]
    1650 --> 1655{1655  
ID DECODE  
SUCCESSFUL?}
    1655 -- YES --> 1675{1675  
ID STACKED  
SYMBOL?}
    1655 -- NO --> 1660{1660  
ENTIRE REGION  
SCANNED?}
    1675 -- YES --> 1680[1680  
STORE ID DATA]
    1675 -- NO --> 1682{1682  
ANY  
REMAINING  
UNEXAMINED  
REGIONS?}
    1680 --> 1684{1684  
ENTIRE REGION  
SCANNED?}
    1684 -- YES --> 1682
    1684 -- NO --> 1686[1686  
STORE ALL ID STACKED  
DATA]
    1686 --> 1688[1688  
INCREMENT/  
DECREMENT  
SCAN LINE  
COUNT]
    1688 --> 1635
    1660 -- YES --> 1670{1670  
ANY  
REMAINING  
UNEXAMINED  
REGIONS?}
    1660 -- NO --> 1665[1665  
INCREMENT/  
DECREMENT  
SCAN LINE  
COUNT]
    1665 --> 1635
    1670 -- YES --> 1682
    1670 -- NO --> 2D[TO 2D DECODE]
    1682 -- YES --> 1615
    1682 -- NO --> EXIT([EXIT])
  
```

FIG.16

FIG. 16



$$A_p = (P2X - P1X)^2 + (P2Y - P1Y)^2$$



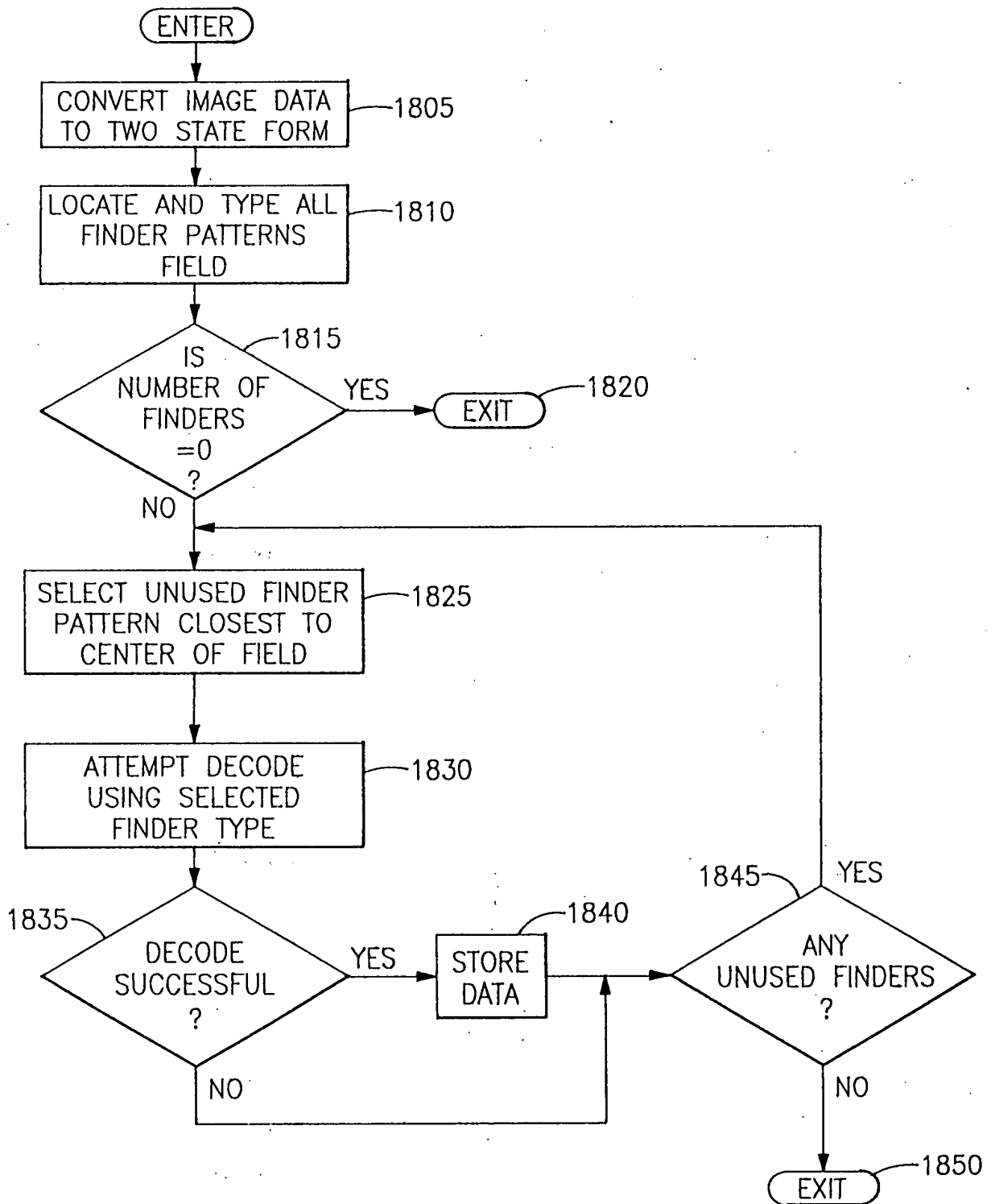


FIG.18

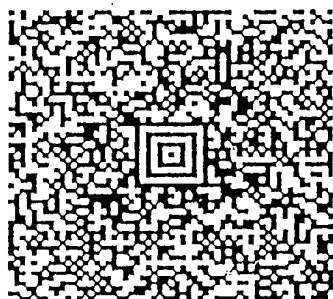


FIG. 19A

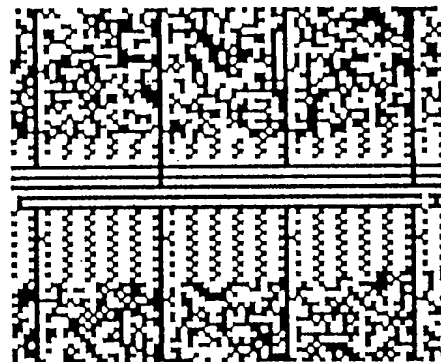


FIG. 19B

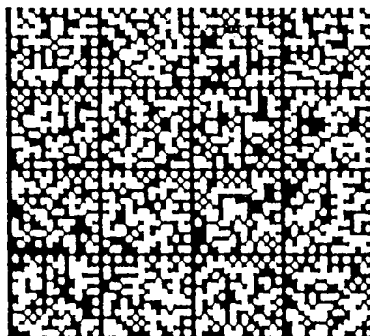


FIG. 19C

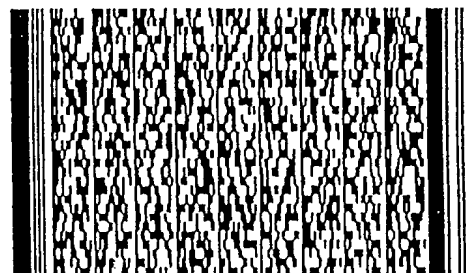


FIG. 19D

```

graph TD
    ENTER([ENTER]) -- "FROM 627 (FIG.6)" --> 2005{2005 ALL ID CODES DISABLED ?}
    2005 -- YES --> 2030{2030 ALL 2D CODES DISABLED ?}
    2005 -- NO --> 2010[2010 PERFORM ID AUTODISC. USING ENABLED ID CODE OPTIONS AND ENABLED SCANNING-DECODING OPTIONS]
    2010 --> 2015{2015 DECODING SUCCESSFUL ?}
    2015 -- YES --> 2020[2020 OUTPUT/STORE DATA]
    2020 --> EXIT1([EXIT])
    2015 -- NO --> 2030
    2030 -- YES --> EXIT2([EXIT])
    2030 -- NO --> 2035[2035 PERFORM 2D AUTODISC. USING ENABLED 2D CODE OPTIONS AND ENABLED SCANNING-DECODING OPTIONS]
    2035 --> 2040{2040 DECODING SUCCESSFUL ?}
    2040 -- YES --> 2045[2045 OUTPUT/STORE DATA]
    2045 --> EXIT3([EXIT])
    2040 -- NO --> 630[TO 630]

```

FIG.20